

IN THE CLAIMS

1. (original) A method of screening for the discovery of disease associated molecular targets for diagnostic or therapeutic intervention, the method comprising;
 performing *in vivo* imaging of diseased tissue to provide one or more *in vivo* images;
 evaluating said *in vivo* image for imaging features;
 obtaining a cellular sample from said diseased tissue, which sample corresponds to said imaging feature;
 determining the expression of genes or gene products in said cellular sample;
 comparing said expression in said cellular sample with a control tissue;
 wherein genes or gene products upregulated in said cellular sample represent molecular targets for therapeutic or diagnostic intervention.
2. (original) The method according to Claim 1, wherein said *in vivo* imaging comprises magnetic resonance imaging (MRI).
3. (original) The method according to Claim 2, wherein said MRI is dynamic contrast MRI.
4. (original) The method according to Claim 1, wherein said step of determining expression of genes comprises hybridization analysis of probes derived from mRNA present in said cellular sample.
5. (original) The method according to Claim 1, wherein said step of determining expression of gene products comprises proteomic analysis.
6. (original) The method according to Claim 1, wherein said control sample comprises cells from said diseased tissue, but spatially or temporally separated from said cellular sample.
7. (original) The method according to Claim 1, wherein said *in vivo* imaging is selected from the group consisting of MRI, MRS, nuclear scintigraphy, PET, CT, ultrasonography, optical imaging, infrared imaging, and x-ray radiography.

8-22 (canceled)